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# **New Jersey Water and Related Land Resource**

## **Long-Range Plan**

**October 1, 2005 through September 30, 2010**

USDA Natural Resources Conservation Service

Somerset, New Jersey

in Cooperation with the

New Jersey State Soil Conservation Committee

New Jersey Soil Conservation Districts

New Jersey Association of Conservation Districts

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## INTRODUCTION

This Water Resource Long Range Plan outlines the way USDA Natural Resources Conservation Service (NRCS) in New Jersey will provide assistance in the management of water quality and quantity. The goal of these actions is to meet society's evolving needs and sustain healthy ecosystems. Although this plan emphasizes water related resources, it establishes a framework to guide NRCS integrated resource planning to address all resource concerns on a watershed basis. This plan recognizes that planning efforts must consider geographic, political, social and economic relations in order to successfully provide quality public service in water resource management.

Management of water resources is a responsibility shared by many public and private entities. NRCS in New Jersey will continue to build upon its success in creating partnerships with other federal, state, county, municipal and private organizations. This collective approach provides for the best application of technical, financial, informational and management resources to address water resource needs.

The Water Resources Program of the USDA Natural Resources Conservation Service (NRCS) in New Jersey is a composite of several program areas: Watershed Surveys and Planning (PL-06), Watershed Rehabilitation (WF-07), Watershed Operations (WF-08), Watershed Rapid Assessment (C0-01) and Emergency Watershed Protection (WF-16).

NRCS-NJ provides assistance through a local delivery system of New Jersey's 15 soil conservation districts. NRCS works with an interdisciplinary team made up of such specialists as agronomists, biologists, engineers, economists, geologists, GIS specialists, landscape architects, sociologists, soil scientists, and others. NRCS-NJ also works with a locally-led planning process. NRCS-NJ works with State, County and local government and organizations to solve a variety of water-related problems via such activities as flood damage mitigation, soil erosion and sediment control, agricultural waste management, recreational development and fish and wildlife development.

During the last two decades, as a result of successive Farm Bills, the Natural Resources Conservation Service (NRCS) has been responding to numerous programs for individual on-farm natural resource conservation. Historically at the State level, area-wide and watershed-wide planning has been accomplished as a result of successive natural resource inventories for problem identification and prioritization. Examples of this activity in New Jersey include the Conservation Needs Inventory (CNI) and, more recently, the National Resource Inventory (NRI). Both of these inventories were conducted as part of a national inventory without having significant sample sizes for use at the state and sub-state level. New Jersey conducted the State Erosion, Sediment and Animal Waste Inventory

(SESAW) in the mid-1980s. There has been no significant inventory since that time.

More recently watershed planning has resulted from a response to disaster-related events, most notably Hurricane Floyd in September 1999. Natural resource planning on an area-wide basis has not been the result of a well-thought-out process involving all the necessary Federal and State partners through a locally-led process.

It is the NRCS intent to develop an ongoing “conversation” (both formal and informal) with Federal, State and other agencies and organizations related to the role of the Natural Resources Conservation Service in water and related land resource planning in New Jersey. It further intends to identify needs for which NRCS has the expertise, interest and long-term program and management commitment to help solve through an interdisciplinary approach, locally-led natural resource planning process.

The following plan has been developed to communicate the objectives of each program area as well as to address how project activities will be scheduled and coordinated by NRCS-NJ.

## BACKGROUND AND SETTING

New Jersey is just over 5 million acres (7,836 sq miles) in size and is approximately 166 miles long and 65 miles wide. The state is bounded on the east by the Atlantic Ocean, on the north by the State of New York, on the west by Pennsylvania, and the south by Delaware. It is situated in a complex geophysical area within the northeastern part of the United States. Major land resource areas include New England and New York Upland, Northern Piedmont and Northern Coastal Plain (Figure 1). The New England and Eastern New York Upland area is located in the northwestern and northeastern portions of the State. Elevations range from approximately 400 feet to 1803 feet at High Point. The Northern Piedmont is an undulating to hilly plateau which rises in elevation toward the northwest with an average elevation of 200 to 400 feet. The central area of the state is within the Piedmont and Inner Coastal Plain physiographic provinces with gently rolling hills and productive soils. To the south and east lies the Outer Coastal Plain with 120 miles of coastline and 1 million acres of Pine Barrens. The Coastal Plain is located in the southern part of the State.

Soils of New Jersey are shown in Figure 2.

New Jersey receives approximately 40-50 inches of rain annually, which is well distributed throughout the year. Temperatures generally range from winter lows of 0 degrees to summer highs of 100 degrees. There are about 180 freeze free days and 120 days of measurable precipitation.

Five major drainage basins occur in the State (Figure 3). These drainage basins include the Delaware River, Atlantic Coastal, Passaic/Hackensack River, Raritan River and Wallkill River. New Jersey has approximately 6,450 miles of rivers and streams, and 24,000 acres of lakes and ponds. The State has subdivided the state into 20 Watershed Management Areas which are based on Hydrologic Unit Code 11-sized watersheds.

Ground water supplies 50 percent of the State's potable water supplies. Eighty percent of the state's area, the highest of any state, is located within Federally designated Sole Source Aquifers. Moreover, about 25 percent of the state's residents rely on private wells, according to the New Jersey Department of Environmental Protection (NJDEP), many of which could run dry in a drought.

Water is at the heart of many of the state's other environmental issues, including the implementation of the Highlands Act, smart growth, wetlands preservation, open space, farmland preservation, toxic waste, flooding, wildlife habitat preservation and storm water and wastewater regulations.

The state's rapid growth has stimulated demand for water at the same time that development pressures (more land, 40 percent, is developed in New Jersey than in any other state) and soaring land costs have increasingly made the cost of constructing more reservoirs prohibitive.

New Jersey is expected to be the first state in the nation to reach build-out of its developable land, which is expected to take place in 20 to 40 years at today's pace of development, according to New Jersey Future. Every day bulldozers eat another 50 acres of land to make room for another house, road or shopping mall.

More than 1.3 million acres of open space have been preserved state-wide through open space and farmland preservation, including an anticipated record-breaking 36,000 acres in 2005 alone according to the State's Green Acres Program.

The 2004 Highlands Act, which preserves nearly 400,000 acres in the Highlands, is considered a model for the nation. The act protects the water supply of 5.4 million people -- more than 60 per cent of the state's residents. Similarly, the state has enacted progressive storm water regulations to protect drinking water.

Estimates of New Jersey's available water show 850 million gallons per day for surface water and 900 million gallons per day for groundwater. The 1990 statewide water demand was 1,500 million gallons per day. According to the State Water Supply Master Plan, completed in 1996, the 2040 demand is projected to be 1,790 million gallons per day. Some predictions are that those projections will be eclipsed long before 2040. The 2040 forecast was based on a prediction that the state's population would reach 8.25 million in 2010. However, the state's population is already 8.7 million, according to a 2005 U. S. Census estimate.

FIGURE 1 – Major Land Resource Areas in New Jersey

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FIGURE 2 – New Jersey Soils

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FIGURE 3 – New Jersey Watershed Management Areas

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In 2004, New Jersey's population was approximately 8,698,879. This population is distributed over a land area of 7,836 square miles making New Jersey the most densely populated state in the nation with 1,134 people per square mile. The state is already the most densely populated in the nation, with a population density of 1,165 people per square mile, which exceeds that of Japan at 875 people per square mile or India at 825 people per square mile. New Jersey's population was 8,414,350 people in 2000. It is anticipated that by 2010 the population will exceed 9 million at a projected growth rate of 7.7 percent. The projected population for 2020 is 9,061,817 people (New Jersey Office of State Planning, 2000). Newark and Camden are the largest cities, however Jersey City, New Brunswick, Trenton and Atlantic City are geographically significant population centers.

The food and agricultural complex in the state represents \$62.5 billion ranking third after pharmaceuticals and tourism in economic benefits. There are about \$812 million in annual cash receipts from the 9600 farms. The nursery/greenhouse/sod industry is the leading commodity group with \$297.4 million in receipts, followed by vegetables (\$192.9 million), equine (\$116 million), fruits (\$82.6 million), field crops (\$46.2 million), dairy (\$33.4 million), and poultry/eggs (\$25.2 million). Farmers in the state produce more than 100 different kinds of fruits and vegetables, of which NJ ranks within the top ten states for cranberries, blueberries, peaches, asparagus, bell peppers, spinach, lettuce, cucumbers, sweet corn, tomatoes, snap beans, cabbage, escarole/endive and eggplant. In addition the commercial fishing industry adds \$100 million annually with its harvest of bluefish, flounder and shellfish.

Overall the state is about 40% developed, 35% forested, 15% cropland, 3% pasture and 7% other. The average erosion rate on the approximately 600,000 acres of cropland is 5.6 tons per acre. There has been a steady rise in the acres of irrigated cropland which is now around 100,000 acres. Over 500,000 acres of rural land has been developed since 1982, of which 200,000 was prime farmland. The state has an active farmland protection program and has permanently preserved about 140,919 acres since 1983 and has a goal of 500,000 acres. More than 54,178 acres were preserved during the last four years alone. More than 17 percent of the state's total farmland, a higher percentage than any other state, is permanently preserved.

Perhaps one of the greatest challenges to environmental planners in New Jersey is that each of the 566 municipalities has its own land use decision making powers. Local "home rule" requires much coordination skill in order to achieve effective regional environmental quality.

## **WATER RESOURCES PROGRAM**

The Watershed Protection and Flood Prevention Program was established by Congress in 1954 under Public Law 566. It is a project-oriented program initiated by local request for assistance in solving land, water and related resource problems in small watersheds (less than 250,000 acres). The program provides technical and financial assistance to individual units of government and qualified organizations that are willing to accept responsibility for undertaking a project as well as doing future operation, maintenance and rehabilitation.

Recently NRCS has charted a new course for the future for its water resource program. Table 1 shows the direction that NRCS is taking in the assessment, planning and plan implementation using various program authorities.

### ***Watershed Surveys and Planning (WF-06)***

Watershed planning refers to the traditional PL83-566 approach to planning a project with PL83-566 implementation assistance. Following Hurricane Floyd in 1999, NRCS provided assistance to the counties and municipalities of the Millstone River watershed to document the location, type and extent of flood damages as well as evaluate various flood mitigation alternatives. It was determined that no major structural measures such as floodwater retarding structures or levees were economically feasible in this 184,000 acre watershed. Instead it was determined that individual non structural projects including elevating, relocating or buying out repetitively flooded structures may be feasible.

Table 4 shows the anticipated planning and implementation projects for watershed surveys and planning. Future plans include completion of the Lockatong and Wickecheoke Creek Water Quality Plan, Swan Creek Watershed Flood Mitigation Plan and Nishisakawick Creek Water Quality Plan in 2007. The Lockatong and Wickecheoke Creek Plan will address sediment, phosphorus and other water quality concerns in this drinking water supply watershed. The Swan Creek Watershed Flood Mitigation Plan will address repetitive flood loss damages in the City of Lambertville. The Nishisakawick Creek Plan will address sediment and phosphorus concerns. The North Branch Rancocas Creek Water Resource Plan, analyzing existing chronic flood damages and developing flood mitigation alternatives, will be completed in 2008.

### ***Watershed Operations (WF-08)***

Historically, New Jersey has been actively involved in the Watershed Protection and Flood Prevention Program with fifteen projects completed. Most of these projects have involved structural measures such as small flood control dams,

channel improvements, levees, dikes, flood walls, pump stations and tide gates. Projects were at Maurice River (Cumberland County), Salem River (Salem County), Cohansey River (Cumberland County), Repaupo Creek (Gloucester County), Parkers Creek (Burlington County), Assunpink Creek (Mercer and Monmouth Counties), Pequest River (Warren County), Furnace Brook (Warren County) and Paulins Kill (Sussex County) in the Delaware River Basin and Stony Brook (Hunterdon and Mercer Counties) in the Raritan River Basin. Work in the Maurice River, Salem River, Cohansey River and Repaupo Creek watersheds involved tide gates with or without dikes and channel improvements. These projects were to prevent flooding that was in part the result of tidal surges in Delaware Bay as well as flooding from tributaries to the Delaware Bay. Parkers Creek involved improving channels to reduce floodwater damages to agricultural land, improve drainage, and reduce erosion and sediment damage. Assunpink Creek projects involved the installation of five flood prevention structures, three multiple purpose flood prevention/fish and wildlife structures, one multiple purpose flood prevention/recreation structure and 12,500 feet of channel work to protect the Trenton area from the 100-year flood. Similar projects were completed on the Pequest River, Furnace Brook, Paulins Kill and Stony Brook.

Three nonstructural land treatment projects were completed. The Navesink River (Monmouth County) project, the most recent project, was aimed at reducing cropland erosion and its impact on a public drinking water supply reservoir and reducing animal waste runoff as it affected water quality in a shellfishing area. Two other projects, Clove Brook (Sussex County) and Upper Salem River (Salem County), had objectives to improve water quality by reducing animal waste runoff and reducing cropland soil erosion.

Figure 4 shows the status and location of PL83-566 projects in New Jersey.

Table 5 shows the anticipated planning and implementation projects for watershed operations. Future work will include dike repair design and construction at Pine Mount-Mill Creek in Greenwich Township, Cumberland County to be completed by 2009.

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**Table 1 - NRCS Water Resources Programs: A New Course for the Future**

Watershed Assessments		Planning	Plan Implementation	Follow-Up/ Adaptive Management
Multiple Watersheds (Resource Profiles)	Land Treatment	CTA	CTA Farm Bill Programs	CTA
	New Structures	Watershed Surveys & Planning	Watershed Operations	CTA
	Identify needs and establish priorities by watershed	CTA	CTA (Land Treatment) Farm Bill Programs (Land Treatment)	CTA
	Combination Of Land Treatment And New Structures	Watershed Surveys & Planning	Watershed Operations (Structures)	
	Rehabilitation of Existing Structures	Watershed Rehabilitation	Watershed Rehabilitation	CTA

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FIGURE 4 – Status and Location of PL83-566 Projects in New Jersey

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### ***Watershed Rapid Assessment (C0-01)***

NRCS has begun to use the Watershed Rapid Assessment approach for the evaluation of basin resources to determine the size, scope, and value of natural resource needs. This approach is rapid, flexible, does not require conformance to the Principles and Guidelines as it uses Farm Bill funding, with planning intensity determined by resource need and follows routine environmental evaluation procedures.

Table 6 shows the anticipated planning and implementation projects using the Watershed Rapid Assessment approach. Future work will include watershed rapid assessments at the Pequest River-Great Meadows in Warren County and the Lower Delaware Coastal Inventory in Gloucester, Salem, Cumberland and Cape May Counties to be completed in 2006.

The Pequest River-Great Meadows project will entail the analysis of the impact of outlet conditions on the drainage, oxidation and subsidence of a organic soil area of approximately 1000 acres affecting approximately five sod producers.

The Lower Delaware Coastal Inventory will entail the determination of the location, extent and impact of various levee systems built to protect approximately 15,000 acres of agricultural, residential, commercial and industrial land from tidal and storm surge inundation. Six PL83-566 projects are included within the study area.

### ***Watershed Rehabilitation (WR-07)***

Since 1950 local project sponsors (with Natural Resources Conservation Service assistance) have constructed over 11,000 small flood control dams across the nation, in New Jersey there have been nineteen (19) dams built within six Public Law-566 Project Areas (see map for project locations). In addition to flood control, eight (8) dams have permanent pools that provide recreational opportunities such as fishing, boating and swimming.

Many of the dams, as well as other structures, are nearing the end of their 50-year design life (Table 2). The first of these dams was built in 1959 and the last in 1986. All structures have performed as designed and have provided flood control and protection for many areas. Periodic inspection of these dams by New Jersey NRCS engineers show that they are generally in good condition. However, eleven (11) of them are nearing the end of their 50-year design life expectancy. Many of these structures need to be rehabilitated to extend the life of the structures and address any more current dam safety issues. Rehabilitation of

these dams is needed to address critical public safety issues in these communities.

The primary purpose of these structures is flood control but many also are multipurpose and are used for water supplies (for agricultural and recreational irrigation needs), recreation, and wetland wildlife habitat.

Some of the issues that must be addressed for these aging projects include:

- Replacing deteriorating components.
- Dealing with unanticipated urban development below or near dams, which increases the potential for loss of life and increased property development.
- Dealing with sediment that has accumulated in reservoirs to the point that the dams can no longer properly function.
- Upgrades to meet current state dam safety regulations.
- Meeting natural resource needs not previously addressed, such as water quality, wetland restoration and wildlife habitat.

The Rehabilitation amendment to the PL83-566 Law was passed in 2000. Assistance from NRCS is available to assess, plan and implement the necessary rehabilitation of structures (dams) where PL83-566 assistance was used in the original planning and implementation. Under the current amendment NRCS can provide rehabilitation planning and financial assistance only for dams. Planning and financial assistance for rehabilitation does not include rehabilitation for dikes, levees, tidegates and pump plants associated with flood protection in coastal areas. Forty percent of the New Jersey PL83-566 projects contain these coastal flood control components (Table 3).

Rehabilitation assistance is provided in three phases, namely, assessment, planning and implementation. Assessment entails evaluating the status of dams in terms of their hazard class and potential downstream impacts if failure should occur as well as the degree to which sedimentation has taken place within the storage pool behind the dam. Planning requires that all natural resource needs within the watershed be addressed and that all possible scenarios (including removal of the structure) be analyzed. Implementation entails design and construction.

Table 7 shows the anticipated planning and implementation workload for Watershed Rehabilitation. Future work includes two dam assessments in 2006 and one dam assessment in 2007 in the Stony Brook watershed Mercer County. Also, dam site rehabilitation plan, design and construction will take place at Site 14 in the Stony Brook watershed in 2007, 2008, and 2009, respectively.

**Table 2 – Potential PL83-566 Rehabilitation**

<b>Watershed</b>	<b>Structure</b>	<b>O&amp;M Sponsor</b>	<b>Year Completed</b>	<b>End of Service Life</b>	<b>Rehabilitation Status*</b>
<b>Paulins Kill</b>					
	Dam Site 2	Newton	1961	2011	1
	Dam Site 3	Newton	1963	2013	1
	Dam Site 4	Newton	1961	2011	1
<b>Stony Brook</b>					
	Dam Site 2	Mercer County	1959	2009	
	Dam Site 3	Mercer County	1969	2019	
	Dam Site 4	Stony Brook-Millstone Watershed Association	1960	2010	
	Dam Site 5	NJDEP	1962	2012	
	Dam Site 7	Stony Brook-Millstone Watershed Association	1960	2010	1
	Dam Site 11A	NJDEP	1962	2012	1
	Dam Site 14	Stony Brook-Millstone Watershed Association	1964	2014	1
<b>Furnace Brook</b>					
	Dam Site 2	Oxford Township	1972	2072	
<b>Assunpink</b>					
	Dam Site 4	NJDEP	1974	2074	
	Dam Site 5	NJDEP	1973	2073	
	Dam Site 6	NJDEP	1977	2077	
	Dam Site 8	Hamilton Township	1967	2067	
	Dam Site 18	NJDEP	1971	2071	
	Dam Site 19	NJDEP	1971	2071	
	Dam Site 20	Mercer County	1979	2079	
	Dam Site 21	Mercer County	1986	2086	

\*Rehabilitation Status: 1- Assessment Complete, 2- Planning Complete, 3-Construction Complete

**Table 3 – Non-Dam PL83-566 Structures**

<b>Watershed</b>	<b>Structure</b>	<b>O&amp;M Sponsor</b>	<b>Year Completed</b>	<b>End of Service Life</b>
Town Bank				
	Pumping Plant	Salem County	1961	2011
Silver Lake-Locust Island				
Silver Lake	Tidegate, Dike	Thorofare Meadow Company	1962	2012
Locust Island	Tidegates(2)	Lower Alloways Creek Township	1962	2012
	Dike	Locust Island Meadow Company	1962	2012
Pine Mount-Mill Creek				
	Tidegate, Dike	Greenwich Township, Cumberland County	1964	2014
Middle Neck				
	Tidegate, Dike	Salem County	1965	2015
Repaupo Creek				
	Tidegate	Greenwich Township, Gloucester County	1965	2015
Maurice River Cove				
Dicky's Ditch	Tidegate, Dike	Commercial Township, Cumberland County	1965	2015
Matts Landing	Tidegate	NJDEP	1963	2013
	Water Control	NJDEP	1963	2013

## ***Emergency Watershed Program (WF-16)***

This program effort was initially authorized by Section 216 of Public Law 81-216 (Flood Control Act of 1950) and more recently as Section 403 of the Agricultural Credit Act of 1978. It is still commonly referred to as the “216” program as a result of the initial authorization. The program provides technical and financial assistance for emergency measure planning and installation of structural and land treatment measures to reduce hazards to life and property where a watershed has been impaired by a fire, flood and other natural element or force.

One program requirement is that there be public sponsorship and that the sponsor be willing to acquire all necessary easements, rights-of-way and permits. Cost sharing of up to 75 percent of the cost of emergency repairs is provided by the Natural Resources Conservation Service. The remaining 25 percent or more of the cost is borne by the sponsor. The sponsor is also responsible for all future operation and maintenance needs of the project. “216” projects are generally completed within 220 days of the date of the natural disaster which caused the watershed damage.

During the past many emergency projects have been successfully completed. These activities have included dune stabilization in Ocean, Atlantic, and Cape May Counties, dike repair in Salem and Cumberland Counties, and streambank stabilization in Essex, Hunterdon, Morris, Passaic and Sussex Counties.

Although the potential workload under this program could be considerable over the next five years, the variable nature of natural disasters makes planning these projects difficult. Therefore no projects are planned in this long range plan.

### ***Reimbursables***

NRCS has been providing assistance, on a reimbursable basis, to a number of municipalities through the Flood Mitigation Assistance Program. The Flood Mitigation Assistance Program is administered by the New Jersey Office of Emergency Management (NJOEM). Municipalities which have been assisted in developing their municipal flood mitigation plan include Franklin Township, Montgomery Township and Millstone Borough in Somerset County and Princeton Township in Mercer County. Assistance is provided to a locally-led committee made up of the elected officials, municipal engineer, planner, emergency management coordinator, flood victims, and others. Plan completion makes the municipality eligible for project grants to implement change to reduce their flood damages.

Table 8 shows the anticipated planning and implementation workload for reimbursables. Future work will result from a NJOEM and NRCS cooperative agreement for NRCS to provide assistance to NJOEM for community outreach and flood mitigation planning during 2006-2007.

Additionally, the City of Lambertville has requested NRCS to complete the Swan Creek Flood Mitigation Inventory to be completed in 2006 . The Inventory will entail conducting an elevation survey of flood-prone structures in the City of Lambertville as well as develop a preliminary review of hydrology and hydraulics. The City of Lambertville was subjected to flooding in September 2004 and April 2005.

New Jersey Water Supply Authority has requested NRCS to assist in the completion of a sediment inventory and water quality plan. The project would be completed in 2007.

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**Table 4 – Anticipated Planning and Implementation Projects: Planning and Surveys**

Project and Product	Sponsor	Funding Source and Fiscal Year Done	Staffing (Staff Years)										TA/FA Funds (\$)
			CO	DC	ECO	ENG	ET	GIS	GEO	RC	WQS	WRP	
Planning and Surveys													
Swan Creek	Lambertville City				0.7	0.2	0.8	0.3				0.1	161,950
Lockatong & Wickecheoke Creek Water Quality Plan	NJWSA	WF-06, 2007			0.1						0.1	0.2	60,000
Nishisakawick Creek Water Quality Plan	Hunterdon County SCD	Reimburs-able/ WF-06, 2007							0.2		0.4	0.4	100,000
North Branch Rancocas Creek Water Resource Plan	Burlington County, Eastampton Twp.	WF-06, 2008			0.2	0.3	0.2	0.2				0.3	112,000

**Table 5 – Anticipated Planning and Implementation Projects: Watershed Operations**

Project and Product	Sponsor	Funding Source and Fiscal Year Done	Staffing (Staff Years)										TA /FA Funds (\$)
			CO	DC	ECO	ENG	ET	GIS	GEO	RC	WQS	WRP	
Watershed Operations													
Pine Mount-Mill Creek Dike Repair Design	Cumberland County, Greenwich Twp, Union Meadow Bank Co., Cumberland-Salem SCd	WF-08, 2009				0.25	0.2		0.05				45,000
Pine Mount-Mill Creek Dike Repair Construct	Cumberland County, Greenwich Twp, Union Meadow Bank Co., Cumberland-Salem SCD	WF-08, 2009	0.1			0.25	0.4						70,000TA 325,000 FA

CO – Contracting Officer  
DC – District Conservationist  
ECO – Economist  
ENG - Engineer  
ET – Engineering Technician  
GIS – Geographic Information System Specialist  
GEO - Geologist  
RC – Resource Conservationist  
WQS – Water Quality Specialist  
WRP – Water Resource Planner

**Table 6 – Anticipated Planning and Implementation Projects: Rapid Watershed Assessment**

Project	Sponsor	Funding Source and Fiscal Year Done	Staffing (Staff Years)										TA/FA Fund (\$)
			CO	DC	ECO	ENG	ET	GIS	GEO	RC	WQS	WRP	
Rapid Watershed Assessment													
Pequest-Great Meadows	Warren County SCD	C0-01, 2006		0.05			0.05			0.1		0.1	29,000
Lower Delaware Coastal Inventory	South Jersey RC&D Council	C0-01, 2006		0.1				0.3				0.1	44,000

CO – Contracting Officer  
DC – District Conservationist  
ECO – Economist  
ENG - Engineer  
ET – Engineering Technician  
GIS – Geographic Information System Specialist  
GEO - Geologist  
RC – Resource Conservationist  
WQS – Water Quality Specialist  
WRP – Water Resource Planner

**Table 7 – Anticipated Planning and Implementation Projects: Watershed Rehabilitation**

Project and Product	Sponsor	Funding Source and Fiscal Year Done	Staffing (Staff Years)										TA /FA Funds (\$)
			CO	DC	ECO	ENG	ET	GIS	GEO	RC	WQS	WRP	
Watershed Rehabilitation													
Stony Brook Dam Assessmt (2 sites)	Mercer County, NJ F&W	WR-07, 2006				0.4							42,000
Stony Brook Dam Assessmt (1 site)	Mercer County	WR-07, 2007				0.2							21,000
Stony Brook Dam Site 14 Plan	Mercer County SCD	WR-07, 2007			0.1	0.4	0.2		0.1			0.4	115,000
Design	Mercer County SCD	WR-07, 2008				0.3	0.3		0.1				64,000
Construct	Mercer County SCD	WR-07, 2009	0.2			0.4	0.4						90,000 500,000

**Table 8 – Anticipated Planning and Implementation Projects: Reimbursables**

Project	Sponsor	Funding Source and Fiscal Year Done	Staffing (Staff Years)										TA/FA Fund (\$)
			CO	DC	ECO	ENG	ET	GIS	GEO	RC	WQS	WRP	
Reimbursables													
Swan Creek Flood Mitigation Inventory	City of Lambertville	Reimbursable, 2006				0.3	0.1	0.15				0.1	60,000
Flood Mitigation Assist. Program Planning and Commty Outreach	NJOEM	Reimbursable, 2006										0.2	26,000
Lokatong & Wickecheoke Creek Water Quality Plan	NJWSA	Reimbursable/ WF-06, 2007			0.1				0.1		0.4	0.3	34,000/ 60,000

CO – Contracting Officer, ECO – Economist, ET – Engineering Technician, GEO – Geologist, RC – Resource Conservationist

DC – District Conservationist, ENG – Engineer, GIS – Geographic Information System Specialist, WQS – Water Quality Specialist, WRP – Water Resource Planner

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